

Effectiveness of an Educational Program on Nursing College Student's Knowledge about Preventative Measures of Irritable Bowel Syndrome in Al Basra University: Comparison study.

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ABSTRACT

Irritable bowel syndrome (IBS) is a common disorder characterized by abdominal pain and altered bowel habit for at least 3 months that is also characterized by abdominal discomfort associated with altered bowel function; structural and biochemical abnormalities are absent. The main aim of the study is to determine the Effectiveness of an Educational Program on Nursing College Student's Knowledge about Preventative Measures of Irritable Bowel Syndrome in Al Basra University. A quasi experimental study design is carried out at the nursing college -university of-Basra through the period from December 8th, 2019 to June 3th, 2020. The program and instruments were constructed by the researcher for the purpose of the study. the purpose of the study. A non- probability purposive sample of (80) nursing students were divided into four groups divided into both stages(second and fourth); two of the study groups consisted of (40) students who were exposed to an instructional program and two of the control groups consisted of (40) students who were not exposed to the program. The study instrument is composed of four parts: Part I. The socio-demographic characteristics of the students, Part II. The general information about IBS, Part III. The protection from IBS, Part IV. The prevention from IBS. The validity of the study instrument was determined through a panel of (13) experts and the reliability of the instrument was determined through the Person correlation coefficient method. The analysis of the data used was descriptive statistics and statistical inferential, in order to find the differences

between the study group and the control group. The study findings indicate that there are significant differences between pre and post-tests in the study group in overall III main domains regarding preventive measure of IBS. The study concluded that The program had an effect on the students' knowledge of the study groups for both stages, the levels of knowledge improved from a weak level to a good level. The researcher recommends performing continuous educational programs for students regarding preventive measures for IBS to increase their level of knowledge regarding how to instruct patients how to deal with this syndrome, increase lectures time and number about IBS and takes lectures in more than one course

KEYWORDS: Educational Program, Nursing College Student, Knowledge, Preventive Measures, Irritable Bowel Syndrome.

INTRODUCTION

Irritable bowel syndrome (IBS) is a common disorder characterized by abdominal pain and altered bowel habit for at least 3 months that is also characterized by abdominal discomfort associated with altered bowel function; structural and biochemical abnormalities are absent.⁽¹⁾ Irritable bowel syndrome is common in the general population; the prevalence of this disease in European countries was about 20%; in recent years, the morbidity of Asian countries is rising year by year, which is near to that in Western countries.⁽²⁾ The world-wide prevalence of Irritable bowel syndrome (IBS) is 11.2%. Patients with Irritable bowel syndrome (IBS) have a significantly lower quality of life, and the economic and societal costs associated with IBS are also considerable.^(3,4) Currently, the medical treatment of Irritable bowel syndrome (IBS) is considered suboptimal and its pathophysiology is poorly understood. It is thought that IBS results from abnormalities of the “gut–brain axis” (a bidirectional circuit of communication between the gut and the brain) that may involve both mucosal and neuro-inflammation.^(5,6) Nutrition appears to play an important role in Irritable bowel syndrome (IBS), both in exacerbating (approximately 60% of patients) or providing relief of symptoms.⁽⁷⁾ The change in stool form and frequency is the best important step to make a positive diagnosis with irritable bowel syndrome, so these changes allowed to classify the irritable bowel syndrome to subgroups based on predominant stool pattern experience.⁽⁸⁾ Over the last 10 years, dietary research has focused on the role of fermentable oligo-, di-, and mono-

saccharides and polyols (FODMAPs) in relation to the induction of IBS symptoms. A substantial body of research has demonstrated the effectiveness of reducing dietary FODMAPs in treating IBS symptomology.⁽⁹⁾

MATERIAL AND METHODS

To achieve the aims of this study, a quasi-experimental study was conducted in the nursing college -Al-Basra university through the period from January 28th, 2020 to June 27th, 2020 . The program and instruments were constructed by the researcher for the purpose of the study. A non- probability purposive sample of (80) nursing students were divided into four groups divided into both stages(second and fourth); two of the study groups consisted of (40) students who were exposed to an instructional program and two of the control groups consisted of (40) students who were not exposed to the program. The study instrument is composed of four parts: first part dealing with the socio-demographic characteristics of the students, the second part dealing with the general information about IBS, while the third part dealing with the protection from IBS and the fourth part dealing with prevention from IBS which consists from (43) items (multiple choices and true or false). Each question was composed of (4) items in an alternative form of a multiple-choice and given the correct answer and the incorrect answer. About (20-25) minutes are given for the test completion. The instructional program consists of four sessions and is implemented for four weeks period in the nursing college-university of Basra. The time required for each session was (45-60) minutes. The validity of the study instrument was determined through a panel of (13) experts and the reliability of the instrument was determined through the Person correlation coefficient method. The analysis of the data used was descriptive statistics and statistical inferential, in order to find the differences between the study group and the control group. Data were analyzed through the use of SPSS application version 16.0. Descriptive data analysis including Mean of the score (M.S), with their Standard Deviation (S.D), and frequency (f). Inferential data analysis includes the T-test for paired samples, One-way analysis of variance (one-way ANOVA), Pearson correlation.

Table (1): Distribution of the Variables (Second and Fourth Stage- Study and Control Group) Related Demographic Characteristics N=80 nursing students

	Second stage	Fourth stage
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Demographic Variables	Variables Classes Statistics	Study group		Control group		Study group		Control group		Total sample	
		F	%	F	%	F	%	F	%	F	%
Age	19 – 22	19	95%	18	90%	1	5%	1	5%	39	48.8%
	23 – 26	1	5%	2	10%	19	95%	19	95%	41	51.2%
	Total	20	100%	20	100%	20	100%	20	100%	80	100%
	Mean	20.85		21.05		24.20		24.20		22.57	
	Sd	0.988		1.050		0.951		0.894		1.89	
Sex	Male	8	40%	9	45%	8	40%	9	45%	34	42.5%
	Female	12	60%	11	55%	12	60%	11	55%	46	57.5%
	Total	20	100%	20	100%	20	100%	20	100%	80	100%
Social status	Single	12	60%	11	55%	11	55%	7	35%	41	51.25%
	Married	6	30%	7	35%	5	25%	8	40%	26	32.50%
	Divorced	2	10%	2	10%	4	20%	5	25%	13	16.25%
	Total	20	100%	20	100%	20	100%	20	100%	80	100%
Income	Enough	11	55%	12	60%	6	30%	10	50%	39	48.8%
	Not enough	9	45%	8	40%	14	70%	10	50%	41	51.2%
	Total	20	100%	20	100%	20	100%	20	100%	80	100%
Eating	Fast	7	35%	5	25%	8	40%	7	35%	27	33.75%
	House	10	50%	11	55%	11	55%	11	55%	43	53.75%
	Canned	3	15%	4	20%	1	5%	2	10%	10	12.50%
	Total	20	100%	20	100%	20	100%	20	100%	80	100%
Education	Second	20	100%	20	100%	0	0%	0	0%	40	50%
	Fourth	0	0%	0	0%	20	100%	20	100%	40	50%
	Total	20	100%	20	100%	20	100%	20	100%	80	100%

Table (1) shows the majority (51.2 %) of participants (nursing students) related to age group were (23-26) years old , concerning the sex the results shows the majority of participants (57.5%) were female, regarding to the social status the majority (51.25%) of sample were single, related to monthly income the results indicate the majority of participants (51.2%) were have not enough monthly income, related to source of eating the majority (53.75%) of samples eating at home, concerning level of education the both group equal in number (50%; 50%) respectively for second and fourth group.

Table 2: Comparison between pre and post application of program for the second stage related to all IBS domains (study groups)

IBS Domains	M.S	N	Sd	Eval.	T-test	p-value	Development %	Sig.
Pre information score	9.75	20	1.97	W	11.78	0.00	152 %	S
Post information score	24.62	20	5.39	M				

Pre protection score	10.95	20	2.23	W	21.29	0.00	157 %	S
Post protection score	28.20	20	2.82	G				
Pre prevention score	5.90	20	0.82	W	38.44	0.00	161 %	S
Post prevention score	15.45	20	0.98	G				
Pre total score	26.60	20	2.50	W	25.80	0.00	156 %	S
Post total score	68.27	20	6.04	G				

Significant= S, good= G, median= M, weak= W=, mean score= MS, stander deviation= Sd, evaluation=Eval

Table (2) shows that the significant differences between pre and post -test of all irritable bowel syndrome domains for the study group when analyzed by t- test, the knowledge level of nursing students improved from weak to good level after the educational program , this result reflect the effectiveness of an educational program

Table (3): Comparison between pre and post application of program for the fourth stage related to all IBS domains (study groups)

IBS Domains	M.S	N	Sd	Eval.	T-test	p-value	Development %	Sig.
Pre information score	19.55	20	3.06	A	14.08	0.00	49	S
Post information score	29.12	20	3.10	M				
Pre protection score	19.60	20	2.60	A	18.02	0.00	60 %	S
Post protection score	31.35	20	2.66	G				

Pre prevention score	13.02	20	1.09	M	10.60	0.00	34 %	S
Post prevention score	17.47	20	1.31	G				
Pre total score	52.22	20	5.28	M	21.24	0.00	49 %	S
Post total score	77.95	20	5.17	G				

Significant=S, good=G, median=M, acceptable=A, mean score= MS, stander deviation= Sd, evaluation=Eval

Table (3) shows there is statistically significant differences between pre and post-test of all irritable bowel syndrome domains for the study group when analyzed by t- test, the knowledge level of nursing students improved from median to good level after the educational program , this result reflect the effectiveness of the educational program.

Table (4). Comparison between Study and Control Group of second Stage regarding students preventive measures for IBS domain questions for pre and post-test

Table (4)Compare prevention’s questions of Second year by Paired Samples T- test												
Number of answers of Second year groups												
prevention questions	Study group’s answers						Control group’s answers					
	Pre	Mean	post	Mean	p-value	Sig.	pre	Mean	post	Mean	p-value	Sig.
Q1	8	5.78	17	14.7	0.00	S	9	5.64	10	8.85	0.00	S
Q2	11		19				5		13			
Q3	13		19				6		15			
Q4	3		11				4		6			
Q5	2		11				5		8			
Q6	6		12				3		6			
Q7	3		14				5		6			
Q8	3		11				2		6			
Q9	6		12				8		8			
Q10	4		12				5		7			
Q11	6		15				8		10			
Q12	7		17				8		12			
Q13	7		19				7		11			

Q14	2		17				4		6			
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S= significant, NS= insignificant

Table (4) shows there are statistically significant differences between pre and post-test for both study and control of irritable bowel syndrome prevention domain when analyzed by paired sample t-test.

Table (5). Comparison Between Study and Control Group of Fourth Stage regarding preventive measures for IBS domain questions for pre and post-test

Number of answers of fourth year groups												
prevention questions	Study group's answers						Control group's answers					
	Pre	Mean	post	Mean	p-value	Sig.	Pre	Mean	post	Mean	p-value	Sig
Q1	8	12.5	17	16.6	0.00	S	12	12.28	14	12.78	0.205	NS
Q2	17		19				15					
Q3	11		16				11					
Q4	11		17				12					
Q5	14		17				13					
Q6	15		18				12					
Q7	12		16				13					
Q8	13		18				13					
Q9	15		16				9					
Q10	12		15				11					
Q11	12		17				12					
Q12	15		18				15					
Q13	8		14				11					
Q14	12		15				13					

S= significant, NS= insignificant

Table (5) shows there are statistically significant differences between pre and post-test by the mean score was (pre 9.75) improve to (post 14.56)of irritable bowel syndrome information domain for the study group, but there are no significant differences between pre and post-test for the control group when analyzed by paired sample t-test.

Table (6) comparison between two groups (study and control) for the second and fourth stage

ANOVA test for Camper of groups post education program

Information score

Groups	Mean	Sd	F- value	p- value	L.S.D - Sig	Result
Second study group	24.62	5.397				
Second control group	13.62	3.486				

Fourth study group	29.12	3.064	58.65	0.00	0.00	Significant
Fourth control group	22.75	2.677				
protection score						
Second study group	28.20	2.820				Significant
Second control group	14.25	2.899				
Fourth study group	31.35	2.661	138.01	0.00	0.00	Significant
Fourth control group	27.45	3.119				
Prevention score						
Second study group	15.45	0.985				Significant
Second control group	9.30	1.922				
Fourth study group	17.47	1.312	92.62	0.00	0.00	Significant
Fourth control group	13.42	2.034				
Total score						
Second study group	68.27	6.046				Significant
Second control group	37.17	4.359				
Fourth study group	77.95	5.170	235.18	0.00	0.00	Significant
Fourth control group	63.62	4.599				

Table (6) shows there is statistically significant differences between study and control group for the fourth and second stage at post- test (after the application of an educational program, this result reflect the effectiveness of an educational program on nursing students knowledge.

DISCUSSION:

Part one: Discussion of Socio-Demographic Characteristic of nursing students at second and fourth stage for both study and control groups

Age Groups

Regarding to nursing students age group, the study result reveals that the majority (51.2%) of participants at (23-26) years old, this finding is consistent with the study of (Vasquez-Rios, 2019) who reported that the majority (66.8%) of nurses aged at or more than 22-years. On the other hand, this finding is inconsistent with that of (Alshammari, 2018) who conducted a study regarding Prevalence of Irritable Bowel Syndrome among Medical Students in Hail University, Saudi Arabia, through which reported that the minority (36.8%) of nurses aged at 24-26 years old.⁽¹⁰⁾⁽¹¹⁾

Gender

Concerning nurses gender, the findings of the current study reveals the majority (57.5 %) of participants was female for the study and control groups, this result consistent with the study conducted at Baghdad city by (Hassan & Najm, 2016) who reported the majority (56.6%) of participants were female for both study and control groups, on other hand these results supported with the findings of (Brown-Lieberson,2019),

who found (56.1%) of the control and study group of his study sample was female, but the findings of current study inconsistent with another study conducted by (Alshammari, 2018) who revealed the majority (48.1%) of participants were male⁽¹²⁾

Social status

Based on the study results, the most of participants in both study and control groups are single (51.25%). this result is consistent with the study of (Alshammari, 2018) who reported the majority (95.5 %) of participants in both study and control groups were single. Another unsupported evidence has been found by Khan, et al., (2019), who observed that the majority (43.4 %) of the sample were single. these findings disagree with study performed by Hassan, (2010), who found that minority of participants in the study and control groups (21.4%) were single.⁽¹³⁾

Monthly Income

The findings of current study reveals the majority (51.2%) of participants in both groups (study and control) have not enough monthly income, this finding agreed with a study done by (Vasquez-Rios, et al. 2019) who indicated (51.5%) of patients (study and control groups) who had somewhat not enough monthly income. But this result disagreed with a study established by (Elhosseiny, et al. ,2019), who reported the majority (57.5%) of participants who had enough monthly income.⁽¹⁴⁾

Eating:

The majority of participants present with not enough income this result may reveals the reason for the majority of participants source of eating was a house and keep away from the fast-food that presents with a high cost.

Level of education:

Concerning nursing students level of education, the study findings displayed the majority of participant (nursing students) were equally distributed (the percentage of second stage was 50% and fourth stage was 50%), this result consistent with a study carried out by Khan et al., (2019) who reported that the second stage percentage was 26.9% and fourth stage percentage was 25.7%. But this result inconsistent with another study results that carried out by (Alshammari et al., 2018) who showed that the percentage of second stage was 9.8% and fourth stage was 20.3%.

Part two: Discussion The Comparison Between Study and Control Groups For Pre and Post Test through paired sample t test in Both Stages (Study and Control Stages)

Regarding to the knowledge of nursing students (second stage) concerning preventative measure of irritable bowel, the findings reveals there are statistically significant differences between pre and post-test for the study group, but reveals there are no significant differences between pre and post-test in the control group related to all domains of preventative measure of irritable bowel syndrome except prevention domains when analyzed by paired sample t-test. Regarding to the knowledge of nursing students (fourth stage) concerning preventative measure of irritable bowel, the findings reveals there are statistically significant differences between pre and post-test for the study group, but reveals there are no significant differences between pre and post-test in the control group related to all domains of preventative measure of irritable bowel syndrome analyzed by paired sample t-test. This result consistent with study conducted by Najm and Hassan, (2016) to determine the effectiveness of an instructional program concerning knowledge on clients with irritable bowel syndrome in liver and digestive disease hospital in Baghdad city, who reported the effectiveness of an instructional program in improving the knowledge of client in the study group. Also the result of current study consistent with the study conducted by (Ghiyasvandian, 2015) to determine the effect of a self-care program on the severity symptom and quality of life of patients with IBS, who reported the implementation self-care program resulted in the improvement of the equality of life and reduction in the severity of symptom in the group that exposed to the program, whereas the finding reveals no significant change was observed in the group that not exposed to the program.⁽¹⁵⁾ Another study conducted by Zheng et al., (2019), supported the current study, who perform a health education program to improve QOL in students with irritable bowel syndrome, who reported a significant differences was observed between the no education group and education group.⁽¹⁶⁾ Also the result of current study consistent with the study conducted by Mahmoudi et al., (2019) to evaluate IBS knowledge, attitude and practice amongst community pharmacist's in Iran, who reported the answer of the pharmacist's after a training courses related to all question was correct, also the IBS training courses improving the pharmacist's in assessing patients with IBS, as they are easily accessible healthcare professionals. ⁽¹⁷⁾ Another study conducted by Borji et al., (2012), supported the current study, who perform Association Between Irritable Bowel Syndrome and Restless Legs Syndrome: A Comparative Study With Control Group, who reported a significantly higher prevalence of RLS in IBS patients.¹⁸⁾ Also, study consistent with the result of the

current study was conducted by Khan et al., (2019) to estimate Assessment of knowledge and related risk factors of irritable bowel syndrome in Alahsa, Saudi Arabia, who reported there should be programs regarding IBS awareness to increase the knowledge and decrease functional disabilities and impact on life. Further, a study inconsistent with the result of the current study was conducted by Bengtsson et al., (2010) to estimate A Holistic Approach for Planning Care of Patients with Irritable Bowel Syndrome, who reported there were no statistically significant differences between the two groups in the present study or compared to the subjects who had GI diseases but not IBS ⁽¹⁹⁾

CONCLUSIONS

Most of the study sample of (the second stage and fourth stage) for the study and control group were females, at age 23-26years, they were single and had not enough monthly income, also had house cooking. the significant differences between pre and post-test of all irritable bowel syndrome domains for the study groups(second and fourth) when analyzed by t-test, the knowledge level of nursing students improved from weak to good level after the educational program, this result reflects the effectiveness of an educational program. The program has effects on the study groups of the level of the second and fourth stages of knowledge toward comparison about preventive domain questions during the period of the test and shows there are statistically significant differences between pre and post-test on them. there are statistically significant differences between study and control group for the fourth and second stage at post-test, As the results showed the study groups(second and fourth) marked change in the information on all areas of IBS prevention, this reflects the effectiveness of an educational program on nursing students' knowledge.

RECOMMENDATIONS

Based on the previously listed results of the study, the researcher recommends the following:

1. Perform continuous educational program for students regarding preventive measures for IBS to increase their level of knowledge regarding how to instruct patients how to deal with this syndrome.
2. Increase lectures time and number about IBS and take lectures in more than one course.

3. Increase health awareness among students through the implementation of courses and lectures for students in coordination with the Ministries of Higher Education and Health in order to control the preventive measures of IBS.
4. Further studies can be carried out in different setting and places with consideration to wide-range sample characteristics to be more representative.

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